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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DANIEL A. HILBRICH

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Appeal 2009-005397  
Reissue Application 10/047,852<sup>1</sup>  
Patent 6,016,740  
Technology Center 3700

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Decided: July 01, 2009<sup>2</sup>

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Before JENNIFER D. BAHR, ROMULO H. DELMENDO, and JOHN C. KERINS, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 from a final rejection of claims 1-8, 10-12, 14-21, and 23-28 (Appeal Brief filed August 4, 2008, hereinafter “App. Br.,” at 5; Examiner’s Answer mailed September 16,

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<sup>1</sup> This application is a reissue application of United States Patent 6,016,740 (hereinafter ‘740 Patent) issued to Appellant on January 25, 2000 from Application 08/977,997 filed on November 25, 1997.

<sup>2</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

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2008, hereinafter “Ans.,” at 2; Final Office Action mailed February 13, 2008). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

#### STATEMENT OF THE CASE

Appellant’s invention relates to a filtering device for an espresso-type coffee maker (col. 2, ll. 40-42). Referring to two prior art documents, Appellant states that the invention is founded on the discovery “that paper coffee filters [e.g., MR. COFFEE® paper filters available in commerce] can remove substantially the C [cafestol] and K [kahweol], which have been known to elevate serum, cholesterol, triglycerides, and liver enzymes in humans, in coffee beverages by filtering both the oils and small particulate grounds which have been found to house C and K (Specification, col. 2, ll. 30-34; col. 1, ll. 29-34, 41-45, 58-61; col. 3, ll. 52-55).

Claim 1 on appeal reads as follows:

1. A filtering device for an espresso-type coffee maker of the type having a spout to deliver heated water under high pressure to finely ground coffee beans to brew coffee therefrom, and a receptacle to receive brewed filtered coffee, means defining a flow path between said finely ground beans to said receptacle, comprising:

a [metallic] permanent filter in said path of heated coffee passing to the receptacle which filter has an opening sized to filter out the fine espresso coffee grounds having a size of 0.3 mm or less; and

at least one layer of filter paper in the path of the heated coffee passing to the receptacle, the at least one layer of filter paper having a filter thickness sufficient to effectively remove and trap lipids from the heated coffee.

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(App. Br. 14, Claims Appendix.)

The Examiner relied upon the following as evidence of unpatentability (Ans. 2-3):

Krebs	4,052,318	Oct. 4, 1977
Smith, et. al. (“Smith”)	5,403,605	Apr. 4, 1995
Giuliano	5,490,447	Feb. 13, 1996

Appellant relied upon the following as rebuttal evidence (App. Br. 12):

Herrick, et. al. (“Herrick”)	5,190,653	Mar. 2, 1993
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The Examiner rejected the claims under 35 U.S.C. § 103(a) as follows:

- I. claims 1, 4, 5, 7, 8, 10-12, 14-18, 21, 23-25, 27, and 28 as unpatentable over the combined teachings of Smith and Giuliano (Ans. 3-4); and
- II. claims 2, 3, 6, 19, 20, and 26 as unpatentable over the combined teachings of Smith, Giuliano, and Krebs (*id.* at 5).

## ISSUES

The Examiner found that Smith discloses a filter device for various types of coffee makers (e.g., an espresso-type coffee maker) including a filter element 42, which may be a paper filter element, and a foraminous support sheet 44, which corresponds to the recited permanent filter, having openings and preferably made of stainless steel (Ans. 3-4). With respect to the recited opening size of the permanent filter of 0.3 mm or less (claim 1), the Examiner found that Giuliano discloses permanent filters having

openings of 0.3 mm or less (*id.* at 4). The Examiner concluded from these teachings that “[i]t would have been obvious to one skilled in the art to modify the permanent filter [i.e., the foraminous support sheet] of Smith with that taught in Giuliano, in order to prevent the passage of coffee grounds particles and any other harmful particles produced from the brewed coffee” (*id.*). According to the Examiner, one of ordinary skill in the art would have known that the opening size of the permanent filter is one of several variables that affect brew rate and brew strength (*id.* at 6-7).

Appellant, on the other hand, contends that neither Smith nor Giuliano “discloses or suggests the *combined use of a paper filter and a permanent filter* to remove harmful lipids from brewed espresso-type coffee” (App. Br. 11). According to Appellant, “there is no indication in Smith that the foraminous support 44 functions to filter any of the coffee grounds” (*id.*). Appellant further asserts that Smith teaches away from the claimed permanent filter opening size because “Smith explicitly discloses that the foraminous support sheet 44 has openings with a diameter of 1 mm to 2.5 mm” and “that the foraminous support sheet should contain the maximum open area consistent with strength so as not interfere with the rate at which the coffee can be brewed” (*id.* at 12).

Thus, the issues arising from the contentions of the Examiner and Appellant are:

- (1) Has Appellant shown reversible error in the Examiner’s factual finding that Smith’s paper filter element would remove and trap lipids as required by claim 1?

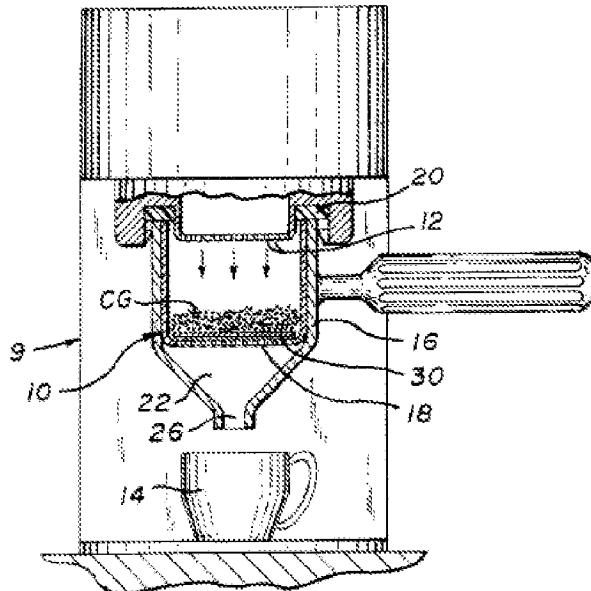
(2) Has Appellant shown reversible error in the Examiner's factual finding that Smith's foraminous support sheet 44 would act as a "permanent filter" as recited in claim 1?

(3) Has Appellant shown reversible error in the Examiner's factual finding that Smith does not teach away from the opening size of the "permanent filter" recited in claim 1?

#### FINDINGS OF FACT

1. Appellant's Specification acknowledges that prior art filtering devices for espresso machines include "finely fenestrated metallic filter on top of which are situated coffee grounds, 0.3 millimeters in size or less (particle size)" (col. 1, ll. 17-19).
2. Appellant's Specification further admits that it was known that such prior art metallic filters are incapable of filtering compounds such as cafestol (C) and kahweol (K), which have been known to cause elevated serum, cholesterol, triglycerides, and liver enzymes (col. 1, ll. 17-34).
3. Appellant's Specification also acknowledges a prior art document, the title of which suggests that paper filter removes cholesterol-raising substances from boiled coffee (col. 1, ll. 58-61).
4. Appellant's Specification informs one skilled in the relevant art that the harmful compounds are removed by action of the paper filter (col. 3, ll. 62-66; col. 4, ll. 19-24).

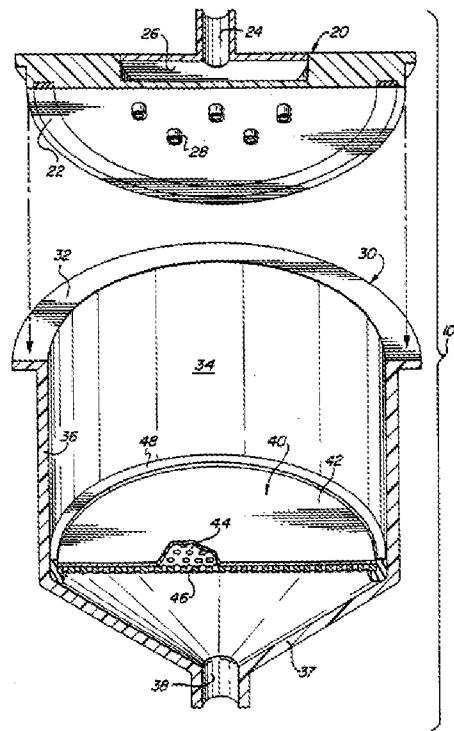
5. Appellant's Specification does not limit the type (e.g., thickness or porosity) of paper filter that may be used (col. 3, ll. 52-55).
6. Figure 1 of the subject application is reproduced below:



*Fig. 1*

Figure 1 depicts an embodiment of the claimed filtering device incorporated into an espresso-type coffee maker including a paper filter 30 "removably placed on top of" a metallic filter 18 (col. 3, ll. 20-22, 32-33, 50-51).

7. Smith's Figure 1 is reproduced below:



Smith's Figure 1 depicts a brewing device capable of brewing coffee comprising, *inter alia*, a filter assembly 40 including a filter element 42 and a foraminous support sheet 44 (col. 2, ll. 43-45; col. 2, l. 60 to col. 3, l. 2; col. 4, ll. 38-41).

8. Smith teaches that filter element 42 may be paper (col. 3, ll. 7-8).
9. Smith further discloses that filter element 42 have microscopic holes (e.g., 12-60 microns) (col. 4, ll. 42-45).
10. According to Smith, "coffee will preferably be of a grind with an average particle size within the range of from 300 to 850 microns [0.3 to 0.85 mm]. . . ." (col. 3, ll. 30-32).

11. Smith states that foraminous support sheet 44 is “preferably of stainless steel, which offers strength to support filter element 42, and rubber seal 48” (col. 4, ll. 38-41).
12. Smith refers to a then copending application (“Case No. 19609”) for further details on the apparatus (col. 2, l. 60 col. 3, l. 2).
13. It is undisputed that Herrick is the patent document that issued from “Case No. 19609,” as identified in Smith, and in fact United States Patent and Trademark Office (PTO) records show that the attorney docket number in the file of the Herrick patent is “19609.”
14. Herrick discloses (col. 3, ll. 22-32; *italics added*):

The filter assembly 40, in addition to filter element 42, includes foraminous support sheet 44, and annular Seal 48. Foraminous support sheet 44, preferably of stainless steel offers strength to support filter element 42. It should contain the maximum open area consistent with strength. *For example*, an at least 0.25 millimeters thick sheet can have holes 46 (preferably circular) covering from 8 to 80 percent of its surface. The openings in these holes are *typically* from 1 to 2.5 millimeters in diameter and spaced from 1.25 to 5 millimeters apart from center to center.
15. Appellant has not relied on any evidence (e.g., declaration evidence including comparative experimental data) demonstrating that the opening size recited in claim 1 provides an unexpected result.

## PRINCIPLES OF LAW

On appeal to this Board, Appellant must show that the Examiner reversibly erred in finally rejecting the claims. *Cf. In re Kahn*, 441 F.3d 977, 985-986 (Fed. Cir. 2006); *see also* 37 C.F.R. § 41.37(c)(1)(vii).

It is well settled that the United States Patent and Trademark Office (PTO) is obligated to give claim terms their broadest reasonable interpretation, taking into account any enlightenment by way of definitions or otherwise found in the specification. *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (“[T]he PTO must give claims their broadest reasonable construction consistent with the specification . . . . Therefore, we look to the specification to see if it provides a definition for claim terms, but otherwise apply a broad interpretation.”). “[A]s applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee.” *ICON Health*, 496 F.3d at 1379.

“A patent applicant is free to recite features of an apparatus either structurally or functionally . . . Yet, choosing to define an element functionally, *i.e.*, by what it does, carries with it a risk.” *Schreiber*, 128 F.3d at 1478 (internal citation omitted). When the PTO has reason to believe that a functional limitation asserted to be critical may in fact be an inherent characteristic of the prior art, it possesses the authority to shift the burden of proof to applicant or patent owner to prove otherwise. *Id.*; *accord In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990); *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977). Whether the rejection is based on inherency under 35 U.S.C. § 102 or on obviousness under 35 U.S.C. § 103, jointly or alternatively, the

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burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products. *Best*, 562 F.2d at 1255.

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

A reference “teaches away” if a person of ordinary skill in the art would have been discouraged or led to a divergent path from the one taken by the inventors. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

## ANALYSIS

Appellant relies on the same set of arguments for both rejections. In addition, Appellant does not present any argument in support of the separate patentability of any particular claim. Accordingly, we address the two rejections together, with particular focus on representative claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii).

We start with claim construction. Claim 1 recites that the filter paper has “a filter thickness sufficient to effectively remove and trap lipids from the heated coffee.” Neither the claim nor the Specification, however, places any limitation on any filter thickness or any degree of lipid removal. Rather, the Specification would have indicated that any paper filter would remove lipids to some extent (Facts 1-5). Absent sufficient basis to limit claim

scope, we are obligated to construe claim 1 to read on any filter paper thickness and any degree of lipid removal.

Thus, contrary to Appellant's belief (App. Br. 11), we find no basis to state that Smith's filter assembly including filter element 42 made of paper would be incapable of removing lipids from heated coffee. Indeed, Appellant's Specification indicates to one skilled in the relevant art that lipids would in fact be removed to some extent by any paper filter element (Facts 1-5). Under these circumstances, the burden of proof was shifted to Appellant to prove that Smith paper filter element would not remove lipids to some extent as required claim 1. Appellant failed to discharge this burden of proof. *See, e.g., Best*, 562 F.2d at 1255.

We also find no merit in the Appellant's argument (App. Br. 11) that Smith's foraminous support sheet 44 is not a "permanent filter" as recited in claim 1. It is undisputed that Smith teaches a filter assembly 40 including a filter element 42, which may be made of paper, disposed on top of a foraminous support sheet 44 made of stainless steel (Facts 7, 8, and 11). While one of ordinary skill in the art might have ordinarily understood that the coffee grounds in Smith are filtered by filter element 42 because it is upstream of the foraminous support sheet 44, this is exactly the same arrangement shown in Appellant's Figure 1 (Fact 6). Thus, to the extent that Smith's filter assembly is arranged in the same or similar way as Appellant's only disclosed embodiment, Smith's foraminous support sheet 44 can also be considered a "permanent filter" depending on the size of the coffee grounds and the size of the perforations in the foraminous support sheet 44, as will be discussed below.

Appellant urges that Smith teaches away from using a foraminous support sheet 44 with the claimed opening sizes (App. Br. 12). We disagree. Smith leaves it up to the person having ordinary skill in the art to determine the suitable ranges of support thicknesses and openings (Facts 11-14). While Herrick discloses an exemplary opening size that is larger than the opening size recited in claim 1 for a given thickness, neither Smith nor Herrick limits the opening size or the thickness of the support sheet in any way (Facts 11-14). The exemplary, non-limiting disclosures in the prior art can hardly be said to constitute a teaching away from the claimed invention.

As pointed out by the Examiner (Ans. 6-7), a person having ordinary skill in the art would have known that the opening size of Smith's foraminous support sheet 44 is a result-effective variable that affects, in addition to support strength for the filter element 42, brew rate and brew strength. It has long been an axiom of patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) (“[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”).

Because Appellant has failed to direct our attention to any secondary considerations of nonobviousness such as unexpected results (Fact 15), we uphold the Examiner's obviousness rejections.

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## CONCLUSION

On this record, Appellant has failed to demonstrate any reversible error in the Examiner's factual findings that: Smith's paper filter element would remove and trap lipids as required by claim 1; Smith's foraminous support sheet 44 would act as a "permanent filter" as required by claim 1; and Smith does not teach away from the opening size of the "permanent filter" recited in claim 1.

## DECISION

The Examiner's decision to reject (i) claims 1, 4, 5, 7, 8, 10-12, 14-18, 21, 23-25, 27, and 28 as unpatentable over the combined teachings of Smith and Giuliano and (ii) claims 2, 3, 6, 19, 20, and 26 as unpatentable over the combined teachings of Smith, Giuliano, and Krebs is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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